

Appl. S.N. 10/063, 844
Amdt. Dated April 2, 2004
Reply to Office Action of January 2, 2004

RD-29,599

REMARKS/ARGUMENTS

This amendment is responsive to the Office Action mailed July 16, 2003 wherein claims 1-17 were rejected under USC §103 (a) over Richard et al. (US 5,990,681) in view of Maudsley et al. (US 4,594,566). In this amendment, claims 1 and 12 were amended. No new matter has been added. Claims 1-17 remain pending in this application. Reconsideration in light of the above amendments and the following remarks is respectfully requested.

Claims 1 and 12 were amended to recite the invention more clearly. Claims 1 and 12 now recite a RF detector array for use with a MRI system comprising a plurality of conductive array elements being substantially parallel to a conductive ground plane, a plurality of capacitors, wherein at least one capacitor is shunted from each array element to the ground plane configured to selectively adjust a corresponding electrical length of each conductive array element; and, wherein a combination of each respective array element, at least one corresponding capacitor and the ground plane forms a resonator that resonates at a selected frequency and the combination being adaptable for a plurality of field strengths. Support for the amendment can be found in the specification at, for example, paragraphs 27-35.

The rejection of claims 1-17 under 35 USC §103 (a) over the combination of the Richard and Maudsley references is respectfully traversed. Independent claims 1 and 12, particularly as amended each recite a plurality of capacitors wherein at least one capacitor is shunted from each of a plurality of conductive array elements to the ground plane and the capacitors are configured to selectively adjust a corresponding electrical length of each conductive array element. Claims 1 and 12 also each recite the combination of an array element, at least one corresponding capacitor and the ground plane forms a resonator that resonates at a selected frequency and the combination is adaptable for a plurality of field strengths. Applicants' recited invention is particularly well-adapted for parallel imaging using a conductive coil array where there is typically a need to balance the physical length of the array elements and the electrical wavelength depending on the MRI magnetic field strength and scanner length. The Richard reference discloses a whole-body RF detector array comprising a plurality of conductive array elements. The Maudsley reference discloses an RF coil device comprising a number of conductors spaced evenly about a circular cylinder and further discloses at col. 6, lines 35-55 a plurality of capacitors for tuning. Nowhere does the Richard or Maudsley reference teach, show or suggest a plurality of capacitors being shunted from each array element to selectively adjust a corresponding electrical length of each array element nor does either reference show a RF coil

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that is adaptable for resonating at a selected frequency and adaptable for a plurality of field strengths, as particularly recited in Applicants' claims 1 and 12.

For a *prima facie* case of obviousness, the Examiner must set forth the differences in the claim over the applied references, set forth the proposed modification of the references which would be necessary to arrive at the claimed subject matter, and explain why the proposed modification would be obvious. Applicants interpret the Office Action as stating that the proposed modification is to combine the detector array of Richard et al. with the capacitors of Maudsley et al. However, the Examiner has not suggested what the motivation would be for this combination. Applicants respectfully submit that the Richard and Maudsley references do not show, suggest or teach the recited capacitors shunted from each array element for adjusting a corresponding electrical length of the array element. Applicants' further submit that the applied references do not show or disclose a RF coil assembly being adaptable for a plurality of field strengths of the MRI system. By contrast, the Examiner's suggested combination for combining conductive array elements (e.g. from Richard) with capacitors (of Maudsley) would suggest the combination for tuning purposes, but there is no suggestion, teaching or disclosure regarding the need to adjust electrical length. The Maudsley reference does indeed disclose their tuning capacitors can adjust resonant frequency of the RF coil, however nowhere does the Maudsley reference show or suggest the need to balance physical length restrictions with electrical length for a variety of field strengths. Thus, Applicants submit that there would be no motivation or desire for one skilled in the art to combine the Richard and Maudsley references since neither reference discloses or suggests the desire to address physical length restrictions when designing a RF coil assembly for a MRI system. The fact that two references can be combined is insufficient to establish a *prima facie* case of obviousness. Further, it is improper to use Applicants' claim as a guidebook for combining references. Applicants' respectfully submit that no reasonable combination of the Richard and Chesneau references would obtain Applicants' recited invention. Thus, Applicants respectfully submit that the recited invention in claims 1 and 12, and claims depending therefrom, is patentable over the Richard and Maudsley references. Therefore, Applicants' respectfully submit that claims 1-17 are allowable and requests that the rejections under 35 USC §103 (a) be withdrawn.

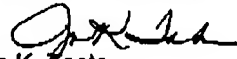
In view of the foregoing amendment and for the reasons set out above, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested.

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Should the Examiner believe that anything further is needed to place the application in condition for allowance, the Examiner is requested to contact Applicants' undersigned representative at the telephone number below.

Respectfully submitted,


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